

ABSTRACT OF THE DISCLOSURE

A method for dry etching and chamber cleaning high dielectric constant materials is disclosed herein. In one aspect of the present invention, there is provided a process
5 for cleaning a substance comprising a dielectric constant greater than the dielectric constant of silicon dioxide from at least a portion of a surface of a reactor comprising: introducing a first gas mixture comprising a boron-containing reactive agent into the reactor wherein the first gas mixture reacts with the substance contained therein to provide a volatile product and a boron-containing by-product; introducing a second gas
10 mixture comprising a fluorine-containing reactive agent into the reactor wherein the second gas mixture reacts with the boron-containing by-product contained therein to form the volatile product; and removing the volatile product from the reactor.

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